

Supplemental Amendment and Remarks

Serial No.: 09/345,335

Confirmation No.: 1129

Filed: July 1, 1999

For: PROCESS VARIABLE GENERALIZED GRAPHICAL DEVICE DISPLAY AND METHODS REGARDING SAME

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a gauge axis;

a first pair of high and low limit elements representative of engineering hard high and low limit values for the corresponding process variable that define a range in which operator set high and low limit values are set and a second pair of high and low limit elements representative of the operator set high and low limit values for the corresponding process variable which define a range in which the process is free to operate, where the first and second pair of high and low limit elements are displayed on the gauge axis; and

a graphical shape displayed along the gauge axis representative of a value of the corresponding process variable relative to the process limit values.

21. (Three Times Amended) A computer implemented method for providing a graphical user display for providing real-time process information to a user for a process that is operable under control of one or more process variables, wherein one or more of the process variables has high and low process limit values associated therewith, the method comprising the step of displaying at least one graphical device for a corresponding process variable, wherein displaying the at least one graphical device comprises:

displaying a gauge axis;

displaying a first pair of high and low limit elements representative of engineering hard high and low limit values for the corresponding process variable that define a range in which operator set high and low limit values are set and a second pair of high and low elements representative of the operator set high and low limit values for the corresponding process variable on the gauge axis which define a range in which the process is free to operate; and

displaying a graphical shape along the gauge axis representative of a value of the corresponding process variable relative to the high and low process limit values.

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40. (Twice Amended) A graphical user display comprising one or more graphical devices for providing real-time process information to a user for a continuous multivariable process being performed at a process plant and operable under control of at least manipulated variables and controlled variables of a plurality of process variables, wherein the graphical user display comprises a display providing the manipulated variables and the controlled variables, and wherein one or more of the process variables comprise high and low process limit values associated therewith, wherein each of a plurality of the one or more graphical devices corresponds to a process variable, wherein each graphical device corresponding to a process variable comprises:

a gauge axis;

a first pair of high and low limit elements representative of engineering hard high and low limit values for the corresponding process variable that define a range in which operator set high and low limit values are set and a second pair of high and low limit elements representative of the operator set high and low limit values for the corresponding process variable which define a range in which the process is free to operate, where the first and second pair of high and low limit elements are displayed on the gauge axis; and

a graphical shape displayed along the gauge axis representative of a value of the corresponding process variable relative to process limit values that provides real-time process information to a user for the process, and further wherein each of the plurality of graphical devices is displayed in proximity to one of the manipulated and controlled variables.

43. (Once Amended) A graphical user display for providing real-time process information to a user for a process that is operable under control of one or more process variables, wherein one or more of the process variables has high and low process limit values associated therewith, the graphical user display comprising one or more graphical devices, wherein each of a plurality of

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the graphical devices correspond to a process variable, wherein at least one graphical device corresponding to a process variable comprises:

a gauge axis;

a first pair of high and low limit elements representative of engineering hard and low limit values for the corresponding process variable that define a range in which operator set high and low limit values are set and a second pair of high and low limit elements representative of the operator set high and low limit values for the corresponding process variable which define a range in which the process is free to operate, where the first and second pair of high and low limit elements are displayed on the gauge axis;

a graphical shape displayed along the gauge axis representative of a value of the corresponding process variable relative to the process limit values; and

a graphical symbol representative of an optimization characteristic for the corresponding process variable.

47. (Once Amended) A computer implemented method for providing a graphical user display for providing real-time process information to a user for a process that is operable under control of one or more process variables, wherein one or more of the process variables has high and low process limit values associated therewith, wherein the method comprises displaying a plurality of graphical devices for corresponding process variables, wherein displaying at least one of the graphical devices comprises:

displaying a gauge axis;

displaying a first pair of high and low limit elements representative of engineering hard high and low limit values for the corresponding process variable that define a range in which operator set high and low limit values are set and a second pair of high and low elements representative of the operator set high and low limit values for the corresponding process variable on the gauge axis which define a range in which the process is free to operate;

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displaying a graphical shape along the gauge axis representative of a value of the corresponding process variable relative to the high and low process limit values; and
displaying a graphical symbol representative of an optimization characteristic for the corresponding process variable along the gauge axis.

51. (Once Amended) A computer implemented method for providing a graphical user display for providing real-time process information to a user for a continuous multivariable process being performed at a process plant, wherein the continuous multivariable process is operable under control of at least manipulated variables and controlled variables, wherein one or more of the manipulated variables and controlled variables has high and low process limit values associated therewith, wherein the method comprises displaying a matrix display having the manipulated variables displayed along a first axis thereof and the controlled variables displayed along a second axis thereof, and further wherein the method comprises displaying a graphical device in proximity to each of the manipulated variables and controlled variables, wherein displaying the graphical device comprises:

displaying a gauge axis;

displaying a first pair of high and low limit elements representative of engineering hard high and low limit values for the corresponding process variable that define a range in which operator set high and low limit values are set and a second pair of high and low elements representative of the operator set high and low limit values for the corresponding process variable on the gauge axis which define a range in which the process is free to operate; and

displaying a graphical shape along the gauge axis representative of a value of the corresponding process variable relative to the high and low process limit values.